ABSTRACT

An implantable medical device includes a sensor and a T-wave

5   analyzer. The sensor is implantable within the body of a patient to sense

electrical cardiac activity and provide an indication of T-wave alternans

within the heart of the patient. The T-wave analyzer is responsive to the

sensor, and evaluates cardiac risk based on comparison of the indication of

T-wave alternans to a predetermined criterion. The T-wave analyzer may

10   form part of a microprocessor, a digital signal processor, or combination of

both. The device may include a pacing generator that applies increased

rate pacing stimuli to the heart to facilitate sensing of the T-wave alternans

by the sensor. The device also may incorporate a memory that stores the

T-wave alternans indication provided by the sensor, e.g., over a number of

15   heartbeats. In addition, the device may be equipped to provide an alert to

the patient or a physician in the event the processor generates the

indication of cardiac risk. The results of the T-wave alternans analysis over

a period of time can be stored as data in memory for access by a

physician, e.g., by telemetry. In response to the alternans data, the

20   physician may prescribe pharmacologic therapy, programmed cardiac

electrical stimulation, or modifications to an electrical stimulation program in

the existing implanted device. In some cases, the implantable medical

device can be programmed to response to the alternans data, e.g., by

controlling a pacing generator.

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